Site Classification for 52 Biogeoclimatic Units in the Southern Interior Forest Region

DRAFT

May 2005

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106-01620/

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[1]A DRAFT version of the items highlighted in red have been placed on the following government FTP site for access and editorial critique. http://www.for.gov.bc.ca/ftp/RSI/external/!publish/Dennis%20Lloyd%20BEC%20Materials/

IDF Interior Douglas-fir Zone

IDFdc	Dry Cold Interior Douglas-fir Subzone	IDFdc	1-21
IDFdk1	Thompson Dry Cool Interior Douglas-fir Variant	IDFdk1	1-27
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MSdm1	Okanagan Highlands Dry Mild Montane Spruce Variant	MSdm1	1-23
MSdm2	South Thompson Uplands Dry Mild Montane Spruce Variant	MSdm2	1-25
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MSmw1	Cascade Moist Warm Montane Spruce Variant	MSmw1	1-23
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ESSFxvw Very Dry Very Cold Engelmann Spruce – Subalpine fir Woodland.....

ESSF Parkland
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ESSFdvp Dry Very Cold Engelmann Spruce – Subalpine fir Parkland.....
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ESSFvcp Very Wet Cold Engelmann Spruce – Subalpine fir Parkland.....
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IMA Interior Mountain Heather Alpine Zone
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IMAdw Dry Warm Interior Mountain Heather Alpine subzone.....
IMAmc Moist Cold Interior Mountain Heather Alpine subzone.....
IMAvk Very Wet Cool Interior Mountain Heather Alpine subzone.....
IMAvm Very Wet Mild Interior Mountain Heather Alpine subzone.....
IMAvc Very Wet Cold Interior Mountain Heather Alpine subzone.....
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Introduction

In the mid-1970's the BC Ministry of Forests undertook the development of the Biogeoclimatic Ecosystem Classification (BEC) for the province of BC; building upon the pioneering work of Dr. V. J. Krajina and his graduate students. This classification system incorporates climate, soil, geology, geography and plants into a single system that has several hierarchical levels. The BEC framework and associated biogeoclimatic (BGC) mapping is recognized as the cornerstone to sound ecologically based resource management in BC. It provides the mechanism to stratify the landscape in a manner that facilitates both broad strategic planning and site specific management practices. It is used by a myriad public, industrial, private, and NGO resource practitioners to manage the land base. Range managers use the classification system as a basis for determining range capability, forage productivity, noxious weed potential, seral stage targets and season of use. Forest health specialists use BEC to stratify the landbase for sampling and the BGC mapping for developing risk and hazard assessments. Wildlife managers utilize the system to determine wildlife suitability/capability, forage potential, riparian/wetland management strategies and for biodiversity planning. Foresters use BEC for OGMA delineation, stocking standards, species selection guidelines, growth predictions and for developing fire and pest management strategies. Researchers use BEC to extrapolate their results to areas with similar ecological conditions. More generally, BEC is crucial for broad strategic planning activities such as development of the protected area strategy, LRMP and timber supply analysis and PEM/TEM mapping, an essential component for landscape level is planning. BEC also serves as the key tool for anticipating where treatment failures can be avoided, thus leading to more environmentally sound, cost-effective resource management.

Field sampling and data analysis in the 70's and 80's resulted in the first approximation BEC classification for the former Kamloops Forest Region (KFR) Lloyd et. al. 1990, A Guide to Site Identification and Interpretation for the Kamloops Forest Region. A BEC database containing approximately 2300 sample plots formed the basis this classification framework. The classification results were correlated provincially with results produced in the other 5 Forest Regions. The provincial correlation process aimed at ensuring consistent application of classification principles and resulting interpretative guidelines. The 1990 classification for the KFR resulted in 30 Biogeoclimatic units, with 8 to 10 site series per subzone/variant. The vast majority of these site series represented forested ecosystems. Many site series were based on less than 5 sample plots, non-forested ecosystems were not documented, and the high elevation ESSF woodland, parkland and the Alpine ecosystems. In the late 1990's considerable site series mapping was initiated. This mapping utilized the existing BEC classification framework, and mappers ignored unclassified typed or simply squeezed ecosystems into the closest fit. As a result many important non-forested ecosystems were not mapped, and when

mapped were inconsistently treated among mappers.

Recognition of the weaknesses, deficiencies, and errors in the 1990 ecosystem classification and BGC mapping for the KFR, led to a survey of other Ministry's and the Forest industry to gauge interest in committing funds to a long-term BEC revision program. In program to revise the BEC classification for the former Kamloops Forest Region (KFR) and to refine the BGC mapping from a 1:250,000 scale to a 1:50,000 scale was initiated with widespread support by government agencies and Regional TSA member forest companies. Between 1998 and 2002 about 5500 new BEC sample plots were established. In addition, data sets from university thesis projects, PEM and TEM mapping projects and other special inventories was acquired and converted into a standard database. Preliminary Biogeoclimatic and site series classification units where presented in 2002 and 2003 to funding supports, as proof of progress. In 2004 the classification results were submitted to the Provincial BEC correlator and to ecological colleagues for review. As a result, the names of several BGC units have changed, in some cases, variants have become new subzones and in other cases, proposed variants have become biogeoclimatic phases. The following table reflects changes made during the past 2 years

Classification change No change in mapped entity		Subzone or Variant split Map entities split		Variants lumped Map entities lumped		Variants now called phases No change in map entity		
2002-3	2005	2002-3	2005	2002-3	2005	2002-3	2005	
IDFxh3	IDFxc	MSxk	MSxk1	ESSFxc3	ESSFxc3	MSdc1	MSdc1w	wet phase
IDFdk5	IDFdc		MSxk2	ESSFxc4		MSdc2	MSdc1d	dry phase
IDFww	IDFww1	MSdm2	MSdm2			ESSFdv1	ESSFdv1	wet phase
ICHmw5	ICHdw3		MSdm3			ESSFdv2		dry phase
ATxc	IMAxc	MSmw	MSmw1					
ATxv	IMAxv		MSmw2					
ATdc	IMAdc	ESSFmw	ESSFmw1					
ATdv	IMAdv		ESSFmw2					
ATmw	IMAmw							
Atwc	IMAwc							
ATvc	IMAvc							

Table 1. Biogeoclimatic classification made since 2002 as a result of provincial correlation and peer review

As will become evident when the reader reviews to new field guide materials, the site series classification for each subzone has been substantially improved. Many previously unreported non-forested site series, including grasslands, wetlands, rock outcrops, talus slopes, avalanche tracks and meadows are now described. In addition, the increased sampling has permitted us to do a better job of characterizing the forested site series. Site series classification results presented at this time reflects 90-95% completed provincial correlation of the classification entities. However, site series names and codes require further revisions and will not be finalized for some time. In the future a table will be

prepared to compare classification entities presented in 1990 with interim 2003-2004 results and the final, provincially correlated and approved classification results. For the purpose of Regional species selection guidelines and stocking standards, users are required to follow the 1990 classification and the most recent associated guidelines. Revised guidelines reflecting the revised classification will be produced during the winter of 2005/6.

BGC mapping

Revised Biogoclimatic mapping has been completed for the entire former Kamloops Forest Region. Field sample plots and elevational and geographic transect notes combined with a detailed correlation of BGC units with Forest Cover mapping has been used in combination with 20m contour mapping to revise the BGC linework. GIS files representing the most current mapping status are available on the following FTP site.

http://www.for.gov.bc.ca/ftp/RSI/external/!publish/Dennis%20Lloyd%20BEC%20Materials/

Plot files portaying the revised maps will be added to this site soon.

Field guide materials

Field guide materials for 52 Biogeoclimatic units are available at the FTP site noted above. Files have been stored by individual subzones or variants, and are also packaged into the following groups of subzone/variants to facility the ease in which materials can be selected for printing. Given the page count of materials produced to date, it is likely that volumes of the published field guide will be grouped in a similar manner. The subzones/variants have presently been grouped in the following manner;

Low elevation dry Bunchgrass and Ponderosa pine BGC units

BGxh1, BGxh2, BGxh3, BGxw1, PPxh1, PPxh2

Interior Douglas-fir BGC units

IDFxc, IDFxh1, IDFxh2, IDFdc, IDFdk1, IDFdk2, IDFdm1, IDFmw1, IDFmw2, IDFww1

Montane Spruce and Sub-Boreal Spruce BGC units

MSdc1d, MSdc1w, MSdm1, MSdm2, MSdm3, MSmw1, MSmw2, MSxk1, MSxk2, MSxk3, MSxv, SBSmm

Dry Engelmann Spruce – Subalpine fir BGC units

ESSFdc1, ESSFdc2, ESSFdc3, ESSFdv1d, ESSFdv1w, ESSFmw1, ESSFmw2, ESSFxc1, ESSFxc2, ESSFxc3, ESSFxv

Wetbelt Interior Cedar – Hemlock and Engelmann Spruce – Subalpine fir BGC units

ICHdw3, ICHmk1, ICHmk2, ICHmw2, ICHmw3 ICHwk1, ICHvk1 and ESSFwc1, ESSFwc2, ESSFwc4, ESSFwcw, ESSFvc, ESSFvcw

Other sections of the guide, specifically, the high elevation ESSF woodland, parkland and alpine tundra are currently being worked on. Correlation of resulted should be completed in the Fall. At which time we will produce guide materials that conform to the format used for other 52 BGC units. When this is finished, we will complete the guides introduction and initiate work on a variety of resource management interpretations. Considerable pressure exists to make the tree species selection and stocking standards our highest priority. Many of the appendix sections will follow materials produced for the 1990 field guide and will simply require and updating and minor revisions.

When we initiated production of the new field guide in 2004, we envisioned publishing results in colour. As a result the IDF and Wetbelt materials contain considerably greater use of colour to profile and distinguish sites and reflect site differences in soil moisture. However, publishing the field guide in colour appears to be prohibitively expensive. Materials produced in 2004/5 lack colour with the exception of the photographs which will be striped from the final field guide and left only on the web version.

Future production of the field guide is expected to follow 3 formats

1) a black and white field guide sized version printed in several volumes on waterproof paper. Users would have the option to purchase select volumes.
2) a 3-ring bound 8.5X11 single volume document containing the entire guide in colour (2 pages per page) and printed on standard paper. This would be for office use, libraries and as a reference.
3) An enhanced, electronic, web based product that would be linked by "hotkeys" to a variety of interpretations and be produced in full colour.

We aim to complete production of the entire document by the Spring of 2006 and have it available electronically in format 2 noted above. At that time users will be required to print copies of sections as required. That will be followed by final edits and production of the black and white 5x8 field guide size version, targeted for publishing later in 2006. However, this will be contingent upon securing funds to cover production costs. Depending on demand, product 2 noted above would be printed as funding becomes available. The web based materials will be an ongoing product that we anticipate will evolve over time and be easier to maintain an updated version.

We also anticipate development of training materials and delivery of training sessions following release of the published field guide.